



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Waste Management Countryside Landfill, Grayslake, Illinois

FROM: Brianna Fenzl, Environmental Engineer
AECAB (IL/IN)

THRU: Nathan Frank, Section Supervisor
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Waste Management Countryside Landfill

Facility Location: 31725 IL-83, Grayslake, IL 60030

Date of Inspection: September 30, 2021

EPA Inspector(s):

1. Brianna Fenzl, Environmental Engineer
2. Karina Kuc, Environmental Engineer
3. Brittany Cobb, Environmental Engineer
4. Alexandra Letuchy, Environmental Engineer
5. Tess Russell, Environmental Engineer

Other Attendees:

1. Steve Niehoff, Director of Air Programs, Waste Management
2. Matt Raine, Gas Operations Manager, Waste Management
3. Brad Stenzel, Operations Manager, Waste Management

Contact Email Address: sniehoff@wm.com

Purpose of Inspection: To determine Clean Air Act (CAA) compliance and perform a comparative Surface Emissions Monitoring (SEM) survey

Facility Type: Municipal solid waste (MSW) landfill

Regulations Central to Inspection: 40 C.F.R. Part 60, Subpart WWW; 40 C.F.R. Part 63, Subpart AAAA, Permit Requirements

Arrival Time: 11:00 AM

Departure Time: 3:16 PM

Inspection Type:

- ☐ Unannounced Inspection
- ☒ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Waste Management representatives unless otherwise noted.

Process Description:

Countryside Landfill (the Landfill) is a municipal solid waste (MSW) landfill located in Grayslake, Illinois. The Landfill opened in 1974. The site consists of 136 acres, of which 24 acres are under final cover and an additional 20 acres will be placed under final cover this year. Waste Management expects to close the landfill in 5.5 years. The North and South expansions are lined. Cells 4 and 5 are the two active cells. Cell 1 was the original cell and was closed in the early 2000s. Cells 2 and 3 stopped filling in approximately 2013-2014.

The Landfill accepts about 2000 tons of waste per day. The makeup of waste is approximately 40% MSW, 40% special soils and related waste, 5-10% construction and demolition, and 5-10% asbestos. As of 2016, the Landfill has accepted less drywall, and since then sulfur levels have been down. The Landfill does not accept refrigerants.

The gas collection and control system (GCCS) has an estimated 132-134 gas wells. For methane leaks found during surface emissions monitoring (SEM), bentonite is placed around wells to resolve the leak. There are two 4200 standard cubic feet per minute (scfm) capacity flares on site. Landfill gas can be routed to a third-party gas to energy plant across the street. When the plant is down, Waste Management operates one or both of the flares.

There are 4 collection points for leachate. Approximately 6 loads per day of leachate are disposed of at the Fox River treatment plant.

Staff Interview:

There are about 10 employees on site. Waste Management has a third party, Environment Management Technologies (EMT), perform SEM at the Landfill. Waste Management told EPA that they average 2-3 hits per year during routine SEM. All hits were found at wells. Waste Management told EPA that the monitoring technician would not move off SEM path unless there were visual indications of leaks.

In the 3rd quarter of 2021, it will be the first time EMT will be monitoring at penetrations.

Odor complaints received by Waste Management have been down this year (2-3) from last year (5). Countryside does not cover with wood chips as often for daily cover, which keeps odors down. Daily cover is typically soil or contaminated soil.

Matt Raine informed EPA that the gas-to-energy plant has been shut down and empty for months and does not plan to reopen. Waste Management plans to build a gas-to-energy plant on site and have it in operation in a couple years. It will be run by a third party.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

Two EPA inspectors performed Method 21 SEM at the Landfill with three inspectors assisting with notes and GPS equipment. EMT and Waste Management both confirmed readings made by EPA inspectors.

Methane values that were higher than 500 parts per million (ppm) are considered an exceedance. Most of the observed exceedances were at wells, in addition to a few at areas other than gas wells. There was a total of 33 exceedances found and documented by EPA.

The team handling TVA #CO9662 was unable to take photos of the area surrounding all but two of their exceedances because their camera failed.

Only one of the flares on site was operating.

Photos and/or Videos: were taken during the inspection. See Appendix A.

Field Measurements: were taken during this inspection. See Appendix B.

RECORDS REVIEW

1. Map of landfill and Gas Collection Control System

CLOSING CONFERENCE

- ☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Results of 3Q21 SEM event
- Past two years of SEM Reporting
- Gas Collection and Control System Map
- Four most recent semi-annual reports
- Most recent depth-to-water measurements
- Past year of wellhead monitoring records

Concerns: EPA inspectors informed Countryside Landfill of methane leaks found during the inspection.

DIGITAL SIGNATURES

Report Author: BRIANNA FENZL  Digitally signed by BRIANNA FENZL
Date: 2021.12.02 13:36:58 -06'00'

Section Supervisor: _____

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APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Image Log
2. Appendix B: Field Measurement Data
3. Appendix C: Exceedance Area Observations

Facility Name: Waste Management Countryside Landfill

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APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Karina Kuc	2. Archival Record Location: <i>One Drive File</i>
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<u>Image Number</u>	<u>File Name</u>	<u>Date and Time (incl. time zone and DST)</u>	<u>Description of Image</u>
1	IMG_8115.JPG	2021:09:30 12:23:37	Exceedance 13
2	IMG_8116.JPG	2021:09:30 12:28:59	Exceedance 14
3	IMG_8117.JPG	2021:09:30 12:42:27	Photo of top of landfill
4	IMG_8118.JPG	2021:09:30 13:03:04	Exceedance 18
5	IMG_8119.JPG	2021:09:30 13:05:46	Exceedance 19
6	IMG_8120.JPG	2021:09:30 13:09:08	Exceedance 20
7	IMG_8121.JPG	2021:09:30 13:11:37	Exceedance 21
8	IMG_8122.JPG	2021:09:30 13:13:49	Exceedance 22
9	IMG_8123.JPG	2021:09:30 13:21:13	Exceedance 23
10	IMG_8124.JPG	2021:09:30 13:21:24	Exceedance 23 Second Photo
11	IMG_8125.JPG	2021:09:30 13:22:35	Exceedance 24
12	IMG_8126.JPG	2021:09:30 13:52:23	Exceedance 25
13	IMG_8127.JPG	2021:09:30 13:57:12	Exceedance 26
14	IMG_8128.JPG	2021:09:30 13:58:01	Exceedance 27
15	IMG_8129.JPG	2021:09:30 14:02:35	Exceedance 28
16	IMG_8130.JPG	2021:09:30 14:16:33	Exceedance 29
17	IMG_8131.JPG	2021:09:30 14:16:37	Exceedance 29 Second Photo
18	IMG_8132.JPG	2021:09:30 14:16:45	Exceedance 29 Third Photo
19	IMG_8133.JPG	2021:09:30 14:23:04	Exceedance 30
20	IMG_8134.JPG	2021:09:30 14:24:52	Exceedance 31
21	IMG_8135.JPG	2021:09:30 14:24:54	Exceedance 31 Second Photo
22	IMG_8136.JPG	2021:09:30 14:30:47	Exceedance 32
23	IMG_8137.JPG	2021:09:30 14:38:07	Exceedance 33
24	IMG_20210930_140908973	2021:09:30 14:09	Exceedance 10
25	IMG_20210930_141313658	2021:09:30 14:13	Exceedance 11
26	1A3C8029.JPG	2021:09:30 12:51	Exceedance 3
27	3EE56385.JPG	2021:09:30 14:03	Exceedance 9
28	4C3AF494.JPG	2021:09:30 13:54	Exceedance 8
29	C810BD1F.JPG	2021:09:30 13:24	Exceedance 5
30	CF9C5EC8.JPG	2021:09:30 12:38	Exceedance 2
31	E4095723.JPG	2021:09:30 12:25	Exceedance 1
32	F423D816.JPG	2021:09:30 13:04	Exceedance 4

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APPENDIX B: EXCEEDANCE AREA OBSERVATIONS

Image Number	Observations
1	Dry and cracked vegetation surrounding well
2	Distressed, dead vegetation surrounding well
4	Heavily distressed area surrounding well
5	Dry and cracked, evidence of dried, previously pooled, area surrounding well
6	Dry and cracked, evidence of dried, previously pooled, area surrounding well
7	Rocky area surrounding well
8	Rocky area surrounding well
15	Rocky distressed area surrounding well
16	Rocky, heavily distressed area surrounding well
17	Rocky, heavily distressed area surrounding well
19	Distressed soil surrounding well
20	Exposed trash around well
21	Exposed trash around well
24	Distressed, dead vegetation
26	Soft, newish cover
28	Open pipe, dead vegetation
29	Cracks in ground, distressed area
30	Dry, cracked area surrounding well
31	Rocky area with pipes in ground
32	Dry, cracked area surrounding well

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APPENDIX C: FIELD MEASUREMENT DATA

Calibration with 0, 500, 2000, 1% ppm methane gas, done by EPA at 10:00 AM

	TVA #CO9562	TVA #SL1555
Calibration Gas (ppm)	Methane Reading (ppm)	Methane Reading (ppm)
0	-2	-1.5
500	490	487
2000	2020	1961
1.00%	1%	1.03%

Bump check data with 500 ppm methane gas, done by EPA at 11:45 AM

	TVA #CO9562	TVA #SL1555
#1	515	470

Background methane data, done by EPA at 2:50 PM

	ppm
Upwind	-0.7
Downwind	4.5

Exceedance Measurements, done by EPA SEM

TVA #CO9662					
Exceedance	Location	ppm (or %) VOC as methane	EPA Inspector with TVA	Confirmation Reading	EMT or Waste Management confirmed
1	Well 162	1200	Brittany Cobb	754	EMT
2	Nearby Well 164R	855	Brittany Cobb	770	EMT
3	Well 216	846	Brittany Cobb	Not confirmed	-
4	Well 107	1554	Brittany Cobb	1881	EMT
5	42.320373, - 88.020886, NE Section of Cell 4	817	Brittany Cobb	418	EMT
6	42.320365, - 88.021167, NE Section of Cell 4	535	Brittany Cobb	Not confirmed	-
7	42.320232, - 88.021667, 65 ft SW of Well 11R2	1497	Brittany Cobb	Not confirmed	-

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8	Well 209	2300	Brittany Cobb	2604	EMT
9	Well 114R2	1177	Brittany Cobb	661	EMT
10	42.321000, - 88.023671, 5 ft W of Well 114R2	650	Brittany Cobb	509	EMT
11	42.321154, - 88.024258, 30 ft W of Well 41R2	2005	Brittany Cobb	764	EMT
12	Well 247	686	Brittany Cobb	520	EMT

TVA #SL1555					
Exceedance	Location	ppm (or %) VOC as methane	EPA Inspector with TVA	Confirmation Reading	EMT or Waste Management confirmed
13	CSHL0022	600	Tess	640	Waste Management
14	Well 223	1.00%	Tess	1.00%	Waste Management
15	Well 224	4800	Tess	5000	Waste Management
16	Well 241	1.00%	Tess	2000	Waste Management
17	Well 225	570	Tess	560	Waste Management
18	Well 156R2	570	Tess	570	Waste Management
19	Well 201R3	2800	Tess	560	Waste Management
20	Well 207R2	1000	Tess	1000	Waste Management
21	Well 123R3	2400	Tess	1000	Waste Management
22	Well 206R2	1.00%	Tess	780	Waste Management
23	Well 203R3	612	Tess	630	Waste Management
24	Well 204R3	3800	Tess	680	Waste Management
25	Well 128R	650	Tess	630	Waste Management

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26	Well 115R	750	Tess	820	Waste Management
27	Well 129R2	3000	Tess	1000	Waste Management
28	Well 236	2.00%	Tess	4.00%	Waste Management
29	Well 69R2	3000	Tess	2700	Waste Management
30	Well 228	1200	Tess	1100	Waste Management
31	HC57	5000	Tess	2000	Waste Management
32	Well 214	4000	Tess	3000	Waste Management
33	0018 labeled, riser by flare 1	800	Tess	760	Waste Management

Bump check data with 500 ppm methane gas, done by EPA at 2:55 PM

	TVA #CO9562	TVA #SL1555
#2	503	485

Calibration Data and Instrument Information

Calibration Gas (ppm)	Lot Number	Expiration Date
0	#1501788	6/2026
500	#304-402110297-1	5/11/25
2000	#1434290	6/2026
1.0%	#1440891	6/2026

Brittany Cobb and Sasha Letuchy used TVA #CO9562.

Tess Russell and Karina Kuc used TVA #SL1555.